Current Issues in the Geodemographic Studies in Russia

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Veröffentlichungsversion / Published Version
Zeitschriftenartikel / journal article

Empfohlene Zitierung / Suggested Citation:
Fedorov, G. M. (2014). Current Issues in the Geodemographic Studies in Russia. *Baltic Region*, 2, 4-21. https://doi.org/10.5922/2079-8555-2014-2-1

DEMOGRAPHY

CURRENT ISSUES IN THE GEODEMOGRAPHIC STUDIES IN RUSSIA

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The article takes stock of the "state of affairs" in contemporary research of geographical demography in the USSR and the RF. The issue, concludes the author, has not received sufficient attention, and the use of geodemographic studies in managing regional development remains limited. This article aims to demonstrate three things: the importance of geodemographic approach in comprehensive regional studies to the needs of regional strategic planning; the key features of geodemographic typology of Russian constituent entities; the need for a differentiated approach to geodemographic management in regions of different types. The cluster approach is used to identify types of Russian regions on the basis of both natural and migration-related change. The author identifies correlations between demographic and economic, social, residential, ethnic and environmental demographic indicators; and describes the possibilities of geodemographic situation management stemming from the typological features of the region. The work seeks to draw attention to further development of geodemographic research in Russia and its role in pre-planning studies at the regional level.

Key words: geodemography, geodemographic situation, geodemographic typology, strategic planning, region

Introduction

Geodemography is an academic discipline that has developed at the intersection of a number of social sciences, most significantly — demography, economics, and socioeconomic geography. Its aim is a comprehensive study of regional features of demographic processes and their relation to both internal (demographic) and external (economic, population distribution, social, ethnic, ecological, political) factors. Geodemographic characteristics of the regions affect the direction and

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Submitted on Febrary 20, 2014.

doi: 10.5922/2079-8555-2014-2-1

rate of their socioeconomic development, whereas the emerging disparities between the actual living standards and the desired course of regional development can aggravate existing economic and social problems that various strategies and programs of the federal government are created to solve. This article analyses the development and current condition of geodemographic studies in the USSR and Russia. It explores the concept of geodemographic situation (GDS), the possibility of producing a comprehensive geodemographic typology, and that of comparing demographic and socioeconomic types of regions. The article also estimates the degree of connection between key GDS characteristics in relation to its different functional subsystems.

Geodemographic Studies in the USSR and the Russian Federation

In the USSR studies of regional demography and its connections to other socioeconomic factors (geodemographic studies) were actively developing in the 1960s, when the data of the Soviet census of 1959 had been made public, and a number of economic and demographic issues had arisen in some regions. Most of these studies concentrated on disproportions between the available workforce and the growing demand for it. The 1970 census gave another impetus to further research growing economic and demographic problems. In the 1980s the attention in regional studies shifted to social, distributional and environmental demographic issues. Thus, gradually, the groundwork for the concept of geodemographic situation was developed, and geodemography emerged as an academic discipline within a broader scope of geography [1—4; 7; 20—25].

Yet in the 1990s, geodemographic studies in Russia became scares, and the theory did not receive any further significant contributions. In part, this can be attributed to the overall decline of Russian economic geography in the period of transition from plan to market economy. Another reason for the decline was the lack of attention paid to demographic processes and their territorial differentiation, with the systemic economic crisis and growing social and political problems in the development of the country and its regions presenting far more urgent challenges.

By the end of the 1990s, however, Russia was presented with a number of burning demographic crises, among which are depopulation affecting most Russian regions; rapidly ageing population, high mortality, low life expectancy, poorly managed migration flows, the formation of a significant contingent of illegal migrants, uncontrollable growth of metropolitan areas — and the degradation of the rural ones. These issues had such profound negative effect on the development of the economy and social life in the country that they could not no longer be ignored. In 2001, the Russian government approved the *Concept for the demographic development of the Russian Federation until 2015* [8]. Programs aimed at increasing birth rate (in 2007, the concept of maternal capital[1] was introduced) and encouraging

[1] A family is entitled to maternal capital following the birth (or adoption) of a second child (or third or subsequent child.

the repatriation of Russians residing abroad were introduced at the federal level. Ageing population and increasing dependency ratio opened up the retirement age debate. Some issues, however, have not yet been addressed. There are drastic territorial differences in the demographic processes affecting the formation of labour resources and implementation of regional policies. Yet a single policy for population and labour resource management, one that would correspond to the regional policy, has not been developed. In Russian regions (to say nothing of its municipalities), economic and demographic factors are still not taken into account while strategies and programmes for regional development are being drawn up, which is one of the factors (alongside an integrated geosystems approach to spatial development planning) that hinders the implementation of such strategic initiatives and even renders it impossible.

The late 1990s saw the emergence of serious geodemographic papers in economic and geographical literature [5—7; 9—13; 19]; and a number of doctoral and postdoctoral theses of the period used an integrated analysis of interconnections between demographic and other socioeconomic processes, including the GDS concept[2]. Geodemography courses were introduced to university curricula [15; 16]. One can expect such studies to gain momentum and form a basis for the necessary changes in the attitudes to the role of geodemography in integrated regional studies, the optimisation of the GDS, and ensuring that they are taken into account in regional development management.

Understanding Geodemographic Situation

Geodemographic situation is a combination of relationships between the demography of the region and all other parameters that may describe its socio-economic makeup. It connects its economic, social, settlement and other functional subsystems (ethnosystem, socioecosystem) to the demographic one and embraces geodemographic processes and structures, as well as the economic, social, ethnic, and environmental demographic relationships. The most general categories of the GDS are demographic (net migration and natural change, age and sex structure), economic and demographic (labour resources), social and demographic (demographic and migration behaviour); distributional (population density and level of urbanisation); ethnodemographic (ethnic composition and related demographic characteristics); and environmental and demographic (health of population). These are affected by numerous factors — demographic, economic, social, distributional, ethnic, environmental, etc. — that determine the regional differentiation of GDS.

[2] A postdoctoral thesis by A.V. Gladyshev (2005); doctoral thesis in economics by T.N. Minazev (1998), O.L. Petrysakov (2003), V.F. Popov (1998); T.B. Turishchev (2004), D.G. Fedorov (2010); doctoral thesis in geography by A.A. Eremin (2011), E.I. Zorina (2002), T Yu. Kuznetsova (2008), D.N. Lipukhin (2001), T.G. Rodionova (2003), N.V. Starkova (2010), V.V. Ustavshchivkov (2003), L.Yu. Chekmenova (2009), E.P. Filina (2007), etc.

We believe that *sustainable development* is a dynamic and balanced development of a region that is characterised not only by economic and social indicators but also by geodemographic ones. Let us analyse this statement in the framework of the economic and socio-demographic connections of the GDS.

As an economic and geographical category of GDS, labour resources are connected with the region's economic subsystem (with the level, structure, and development rate of economy) through the demand for workforce and its sufficiency; and with the demographic subsystem (the age-sex structure, reproduction, and migration) through expanded, simple or contracted reproduction. One synthetic parameter describing these interrelations is the workforce balance. High rates of economic development (often considered an indicator of successful development of the whole region) against a disproportionate workforce balance result in the emergence of multifarious obstacles to the development of the region or the country as a whole.

Similarly, sociodemographic categories of demographic and migratory patterns characterize relationship between the regional social subsystem (with the corresponding standard of living) and the rate of reproduction, geographic mobility, and net migration. In this case, we can speak of social demographic balance. In the majority of Russian regions today the sociodemographic situation is characterised by demographic behaviour aimed at the creation of a one-child family (often with a single parent; most commonly, a mother); limited geographic mobility (accompanied by high net migration rate); positive net migration rate with most post-Soviet countries; and negative net migration rate with developed non-CIS countries. Neither in demographic nor in social terms, can this situation be considered optimal; it is indicative of both social and demographic crisis in the country as a whole and its regions in particular.

As to the assessment of demographic processes and structure, neither contracted or expanded reproduction, nor negative migration in the conditions of contracted reproduction of population and labour resources, nor positive net migration coupled with expanded reproduction, nor significant age and sex disparities can be considered normal. There is a need to justify measures for optimisation of demographic processes and structures at all hierarchical territorial levels. Moreover, achieving such optimisation should become one of the targets of regional development alongside economic, social, and environmental aims. With strong depopulation in certain regions and rather expanded reproduction in others accompanied by serious geographic mobility disparities, this optimization should become the top priority.

The interconnections and their balances mentioned above, which are similar to the economic and sociodemographic ones, can be observed in distributional, environmental and demographic, and other geodemographic relationships.

Correlations between Geodemographic Indicators in Russian Regions

The most general demographic categories are those of natural increase, migration rate, and the age and sex population structure. Mutual correlations between the GDS indicators (see table 1) are rather trivial. Natural increase

is in direct proportion to birth rate (a correlation coefficient of 0.92) and in reverse proportion to mortality rate (a correlation coefficient of –0.92). Birth rate has a negative relationship with mortality rate and the percentage of population above retirement age and a positive one with the percentage of population below working age; mortality rate has a negative one with the birth rate and the percentage of population below working age and a positive one with the percentage of population above retirement age. Positive net migration does not have a strong correlation with other demographic characteristics. The percentage of working age population has a positive relationship with the percentage of male population and that of population above retirement age has a negative relationship with the percentage of male population.

Table 1

Correlation Coefficients Between GDS Demographic Indicators in Russian Regions, 2012

Indicator*	Indicator*							
	1	2	3	4	5	6	7	8
1	—	*0.92*	*–0.92*	–0.20	*0.92*	0.35	*–0.92*	0.58
2	*0.92*	—	*–0.70*	–0.25	*0.94*	0.11	*–0.83*	0.46
3	*–0.92*	*–0.70*	—	0.12	*–0.75*	–0.55	*0.88*	–0.62
4	–0.20	–0.25	0.12	—	–0.35	–0.09	0.33	–0.35
5	*0.92*	*0.94*	*–0.75*	–0.35	—	0.13	*–0.89*	0.53
6	0.35	0.11	–0.55	–0.09	0.13	—	–0.57	*0.73*
7	*–0.92*	*–0.83*	*0.88*	0.33	*–0.89*	–0.57	—	*–0.78*
8	0.58	0.46	–0.62	–0.35	0.53	*0.73*	*0.78*	—

Calculated by the author based on [14; 17; 18].
*Indicators:
1 — natural increase (decrease) rate,
2 — birth rate,
3 — mortality rate,
4 — net migration rate,
5 — percentage of population below working age
6 — percentage of working age population
7 — percentage of population above retirement age,
8 — percentage of male population.

Correlation Between Geodemographic Indicators

Interdependence between purely demographic and geodemographic indicators calculated using the general correlation coefficient is not very strong, with the following exceptions (see table 2):

— correlation between the percentage of Russians and such indicators as the natural increase and birth rates; and the percentage of people below working age (inverse proportion), the mortality rate and the percentage of people

above retirement age (direct proportion). Therefore, the higher the percentage of Russians in the ethnic structure of the region, the lower is the percentage of children and the higher is the percentage of people above retirement age and the mortality rate;

— correlation between the percentage of people under working age and a high unemployment rate, i. e. regions with a higher birth rate show a higher unemployment rate.

Table 2

Correlation Coefficients Between Demographic and Other GDS Indicators in Russian Regions, 2012

Demographic indicator	Other geodemographic indicators*							
	9	10	11	12	13	14	15	16
1	0.66	0.01	0.14	0.27	0.02	−0.42	*−0.76*	0.24
2	0.69	−0.11	−0.004	0.07	−0.10	−0.48	−0.69	0.12
3	−0.53	−0.13	−0.28	−0.45	−0.13	0.29	*0.72*	−0.33
4	−0.11	0.10	0.29	0.29	0.28	0.22	0.35	0.16
5	*0.77*	−0.12	−0.06	0.04	−0.16	−0.59	*−0.77*	0.21
6	−0.18	0.62	0.52	0.32	0.09	0.33	−0.13	−0.25
7	−0.55	−0.19	−0.19	−0.18	0.09	0.33	*0.70*	−0.06
8	0.10	0.36	0.28	0.12	−0.09	−0.10	−0.36	−0.20

Calculated by the author based on [14; 17; 18].

*Indicators:

1 — natural increase (decrease) rate,
2 — birth rate,
3 — mortality rate,
4 — net migration rate,
5 — percentage of people under working age,
6 — percentage of working age population,
7 — percentage of population above working age,
8 — percentage of male population,
9 — percentage of the unemployed (according to the ILO classification),
10 — economic activity of population,
11 — ratio of personal monetary income to the cost of a set of selected goods and services,
12 — percentage of people with higher education,
13 — population density,
14 — percentage of urban population,
15 — percentage of Russians,
16 — density of rural population.

An attempt to identify the substantial correlations between the standards of living and the geodemographic indicators produced a negative result. The correlation coefficient between GRP per capita and personal income, on the one hand, and some other GDS indicators, on the other hand, did not exceed 0.33 (table 3). A weak positive relationship was observed between the stan-

dards of living (GRP and income per capita) and the net migration rate, and a negative one between the standards of living and the unemployment rate. There was a weak correlation between geodemographic indicators and climate conditions (mid-January and mid-July temperatures). There was a stronger correlation between the GDS characteristics and the distance from Moscow (the birth and unemployment rates showed a weak relationship with the distance from Moscow, the mortality and net migration rates showed a negative relationship).

Table 3

Correlation Coefficients Between GRP *Per Capita*, Monetary Income and Selected Geodemographic Indicators

Geodemographic indicators	Geodemographic factor				
	GRP per capita	Income per capita	Mid-January temperature	Mid-July temperature	Distance from Moscow
Birth rate	−0.07	0.03	−0.27	−0.02	0.41
Mortality rate	−0.15	−0.33	0.07	0.01	−0.36
Net migration rate	0.14	0.15	0.29	0.10	−0.34
Unemployment rate	−0.26	−0.26	0.14	0.25	0.22

Calculated by the author based on [14; 17; 18].

The lack of substantial correlations between geodemographic indicators and the corresponding external factors makes it impossible to use a single mechanism (for example, an increase in the monetary income) to improve the demographic situation of the population. Only a combination of certain factors (the development of social infrastructure, improvement of territorial and industrial organisation of manufacturing and population distribution system, etc.) can remedy the situation.

Demographic Typology of Russian Regions Vs. the Typology Based on a Combination of Other GDS Characteristics

A classification of Russian regions based on eight demographic indicators using the *SPSS* programme made it possible to identify eight demographic types of regions and a number of subtypes within them (fig. 1, table 4).

In figure 1, type I brings together Moscow and Saint Petersburg where the birth rate exceeds the mortality rate. However, the percentage of children in this region is the lowest in Russia. It means that both capitals register babies born to mothers that do not permanently reside in Moscow and Saint Petersburg (students, labour migrants) or the Moscow and Leningrad regions. In effect, age-specific birth rate among permanent residents is rather low. Together with type II regions, they have the highest migration rate in Russia.

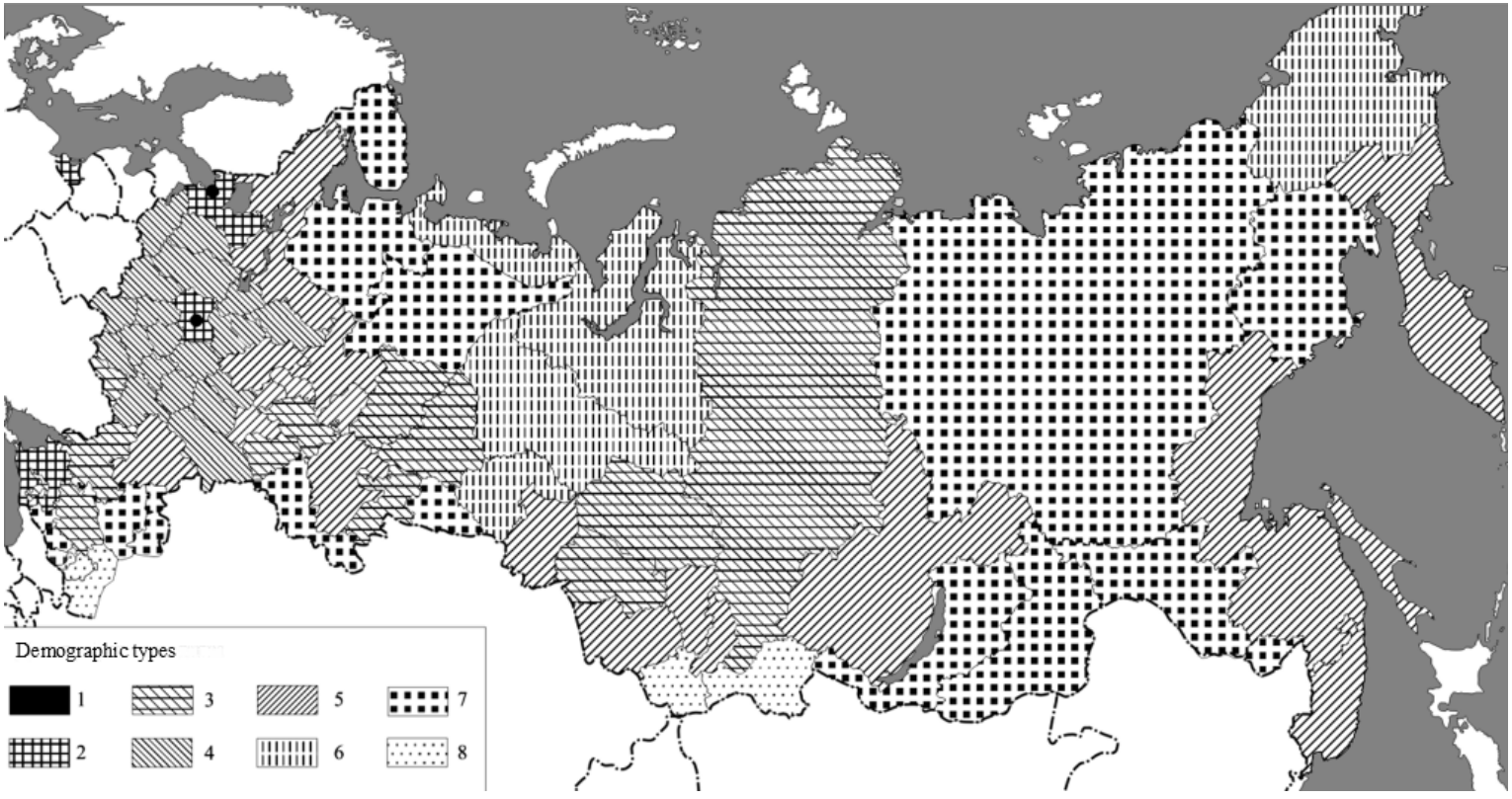

Fig. 1. Demographic Typology of Russian Regions (as of 2011)

Table 4

Characteristics of Demographic Types (Subtypes) of Russian Regions, 2011

Type, subtype	Indicator							
	Natural increase per 1,000 population	Birth rate, People, per 1,000 population	Mortality, people, per 1,000 population	Net migration, people, per 1,000 population	Population under working age, %	Working age population, %	Population above retirement age, %	Male population, %
1	0,1—1	11—13	10—12	9—15	12—13	62—63	24—26	45—46
2	−6—0	9—13	13—15	9—16	14—17	59—62	23—25	46—47
3	−2—2	12—14	12—14	1—8	15—18	58—63	22—24	46—47
3.1	0,5—2	12—14	12—14	1—8	16—18	60—63	22—23	46—47
3.2	−2— −0,5	12—13	13—14	1—5	15—18	58—61	24	46
4	−8— −3	10—13	14—20	−4—4	14—16	58—61	24—28	45—46
4.1	−7— −3	10—12	14—20	0,2—4	14—15	58—61	25—28	45—46
4.2	−8— −3	10—13	14—18	−4— −0,2	14—16	58—61	24—28	45—46
5	−3—3	13—16	12—14	−4— −0,02	15—19	60—65	18—22	46—50
5.1	0,5—3	14—16	13—14	−4— −1	17—19	60—61	20—22	46—47
5.2	0,1—2	13—16	12—14	−3— −0,2	16—19	61—65	18—22	46—50
5.3	−3— −1	11—14	14—16	−4— −0,6	15—18	59—63	20—25	46—48
6	7—11	14—18	5—12	−5—6	20—22	62—70	8—15	48—51
6.1	9—11	17—18	6—10	1—6	20—23	62—68	11—15	48—49
6.2	7—11	14—17	5—12	—5	22	67—70	8—11	50—51
7	−2—8	12—18	9—16	−14— −4	17—24	58—64	13—25	46—49
7.1	4—8	14—18	9—12	−14— −5	20—24	59—63	13—21	46—49
7.2	−2—3	12—16	13—16	−14— −4	17—21	58—64	18—25	46—48
8	11—20	19—26	4—11	−10—9	26—34	57—62	8—15	45—49
8.1	19	23	4	9	31	60	9	45
8.2	11—20	19—26	5—11	−10	26—34	57—62	8—15	47—49

Based on [17].

Types (subtypes)

1 — Moscow, Saint Petersburg.

2 — Krasnodar, Moscow, Leningrad, and Kaliningrad regions.

3.1 — Republic of Tatarstan, Stavropol, Krasnoyarsk, Perm, Sverdlovsk, Chelyabinsk, Novosibirsk, and Tomsk regions.

3.2 — Republic of Adygea; Belgorod, Rostov, and Samara regions.

4.1 — Voronezh, Ivanovo, Kaluga, Kursk, Lipetsk, Ryazan, Smolensk, Tambov, Tver, Pskov, Nizhny Novgorod, Yaroslavl, and Saratov regions.

4.2 — Republic of Mordovia, Bryansk, Vladimir, Kostroma, Oryol, Tula, Novgorod, and Penza regions.

5.1 — Republics of Bashkortostan, Mari El, Udmurtia, Chuvashia, Khakassia.

5.2 — Kamchatka, Khabarovsk, Irkutsk, and Omsk regions.

5.3 — Republic of Karelia, Altai, Primorsky, Vologda, Volgograd, Kirov, Ulyanovsk, Kemerovo, and Sakhalin regions.

6.1 — Tyumen region, Nenets, Khanty-Mansi and Yugra autonomous regions.

6.2 — Yamal-Nenents and Chukotka autonomous regions.

7.1 — Republics of Kalmyk, Kabardino-Balkaria, Krachay-Cherkessia, North Ossetia — Alania, Buryatia, and Sakha.

7.2 — Republic of Komi, Zabaikal, Murmansk, Arkhangelsk, Astrakhan, Kurgan, Orenburg, Amur, and Magadan regions, Jewish autonomous region.

8.1 — Republic of Ingushetia.

8.2 — Republics of Dagestan, Chechnya, Altai, and Tyva.

Type II is characterised by a birth rate close to the national average (or lower than the national average as in the case of the Leningrad region for the reason stated above), an average or above average mortality rate coupled with a negative or neutral (the Krasnodar region) natural increase rate. The age and sex structure of the population is similar to the national average.

Type III regions show a low positive (3.1) or a slightly negative increase rate (3.2) with birth and mortality rates close to the national average. These regions are characterised by a lower migration rate than I and II type regions, whereas the age and sex structure is close to the national average.

Type IV regions show a strong natural decrease rate coupled with a slightly positive (4.1) or negative (4.2) net migration rate. The percentage of children and non-working age population is above the national average. The percentage of male population is close to or slightly below the national average.

Type V brings together regions characterised by a slightly negative net migration rate, an age and sex structure close to the national average, and a percentage of male population close to or above the national average. Subtypes 5.1 and 5.2 show a slightly positive net migration rate — subtype 5.1 due to an increased age-specific birth rate in national republics, whereas subtype 5.2 due to a higher percentage of population of reproductive age. Subtype 5.3 regions are characterised by a small natural decrease.

The northern regions of Russia, rich in natural resources, comprise type VI and are characterised by an increased percentage of working age (and reproductive age) population and a low percentage of population above retirement age, which contributes to a rather high birth and natural increase rate. Subtype 6.1 shows a positive and subtype 6.2 — a negative natural increase rate.

Type VII is characterised by a strongly negative net migration rate and a high percentage of male population. Subtype 7.1 brings together national republics with a significant natural increase and a percentage of below working age population above the national average. Subtype 7.2 regions demonstrate a small natural increase or a small natural decrease, however, the percentage of children does not exceed the national average as dramatic as in subtype 7.1.

Type VIII republics show the most considerable natural increase (due to a high birth and a low mortality rate), a high percentage of children and a small percentage of people above retirement age. The percentage of male population is also above the national average. Subtype 8.2 is characterised by a strongly negative net migration rate, whereas subtype 8.2 (Ingushetia) by a positive one with the neighbouring republics (as a result of a relatively recent emergence of the Republic of Ingushetia as a separate Russian region).

Our attempt to analyse the relationships between the selected demographic and other geodemographic indicators did not result in identifying a large number of substantial relationships between the former and the latter. Therefore, there is a need to compare the identified demographic types of Russian regions with the identified types of regions based on other geodemographic indicators. (It is worth noting that the latter reflect the connection between the demographic processes and structures and the socioeconomic factors that are external to the GDS.) A typology of Russian regions based on economic, social, distributional, and environmental demographic indicators is given below (fig. 2, table 5).

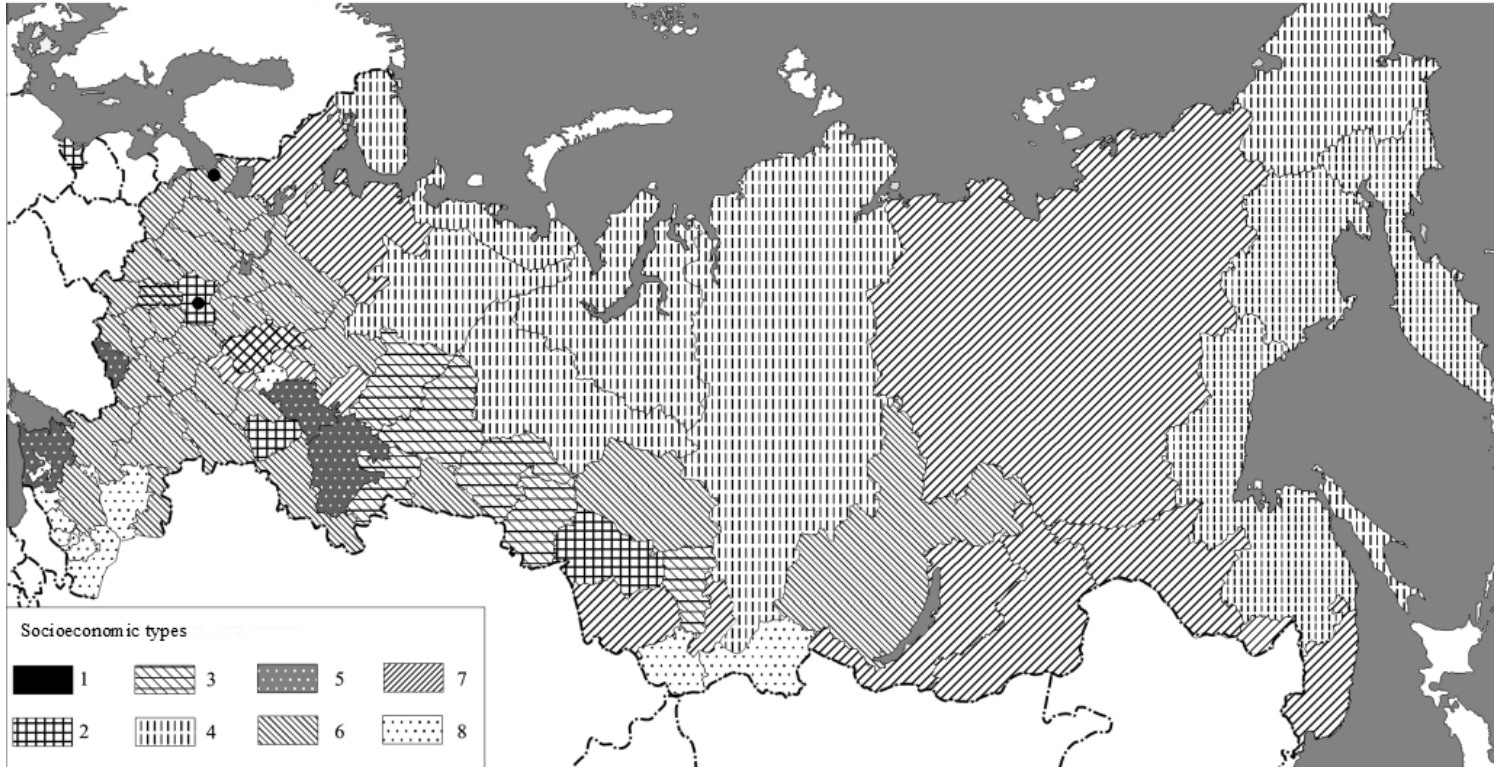

Fig. 2. A Typology of Russian Regions Based on a Combination of Economic, Social, Distributional, and Environmental Demographic Characteristics, 2011

Table 5

A Typology of Russian Regions Based on a Combination of Economic, Social, Distributional, and Environmental Demographic Characteristics, 2011

Type, subtype	Indicator							
	Unemployed (according to the ILO classification), %	Economically active population, %	Personal monetary income to the cost of a set of selected goods and services, %	People with higher education in active workforce, %	Population density, people per km^2	Urban population, %	Ethnic Russians, %	Density of rural population, people per km^2
1	1	73	266—364	44—48	3600—11000	99—100	92	
1.1	1	73	364	48	11000	99	92	—
1.2	1	73	266	44	3600	100	92	—
2	3—7	69—71	179—257	25—37	34—154	76—81	86—95	8—29
3	6—7	67—70	197—268	23—29	9—39	62—85	84—94	3—7
4	3—8	68—82	210—367	12—35	0.1—6	67—96	52—92	0.01—1
4.1	3—8	70—82	241—367	12—34	0.1—6	67—93	52—86	0.02—1
4.2	3—8	68—78	210—224	24—31	0.3—5	77—96	65—91	0.01—0.5
4.3	6	70—73	182—195	32—35	0.7—2	77—82	86—92	0.2—0.3
5.1	4—6	64	212—239	26—29	57—71	54—67	88—94	19—33
5.2	4—6	67—70	240—259	22—30	28—56	61—76	36—40	11—14
6.1	4—6	63—71	154—205	23—29	21—60	58—81	74—97	8—17
6.2	3—8	64—70	166—200	20—31	3—35	60—82	68—97	0.6—7
7.1	5—8	63—71	150—212	22—28	0.3—36	61—79	38—82	0.1—13
7.2	5—11	64—70	152—210	19—29	1—14	56—77	90—94	0.6—6
8.1	6—18	57—69	109—227	27—34	2—69	29—64	4—64	0.8—51
8.2	31—48	65—67	157—164	30—32	85—122	35—40	1—2	34—40

Based on [17].

Types and subtypes

1.1. Moscow.
1.2. Saint Petersburg.
2. Kaliningrad, Kaluga, Moscow, Nizhny Novgorod, and Samara regions.
3. Perm, Kemerovo, Novosibirsk, Omsk, Sverdlovsk, Chelyabinsk, and Tyumen region.
4.1. Nenents, Khanty-Mansi — Yugra, Chukotka, and Yamalo-Nenets autonomous region, Sakhalin region.
4.2. Republic of Komi, Krasnoyarks, Magadan, and Murmansk region.
4.3. Kamchatka and Khabarovsk regions.
5.1. Krasnodar and Belgorod regions.
5.2. Republics of Bashkortostan and Tatarstan.
6.1. Stavropol, Bryansk, Vladimir, Voronezh, Ivanovo, Kursk, Leningrad, Lipetsk, Oryol, Penza, Rostov, Ryazan, Tambov, Tula, and Ulyanovsk regions.
6.2. Astrakhan, Volgograd, Vologda, Irkutsk, Kirov, Kostroma, Kurgan, Novgorod, Orenburg, Pskov, Saratov, Smolensk, Tver, Tomsk, and Yaroslavl regions.
7.1. Republics of Buryatia, Karelia, Mari El, Mordovia, Sakha, Udmurtia, and Khakassia.
7.2. Altai, Zabaikal, Primorsk, Amur, and Arkhangels regions, Jewish autonomous region.
8.1. Republics of Altai, Kabardino-Balkaria, Karachaevo-Cherkessia, Adygea, Dagestan, Kalmykia, North Ossetia — Alania, Tyva, Chuvashia.
8.2. Republics of Ingushetia, Chechnya, Kalmykia, Kabardino-Balkaria, Karachaevo-Cherkessia, North Ossetia — Alania, Buryatia, and Sakha.

Similarly to the previous classification based on demographic characteristics, type I brings together Moscow and Saint Petersburg. These cities of federal significance are characterised by close to zero unemployment, a high percentage of economically active population, and a high specific weight of people with higher education. Saint Petersburg has one of the highest ratios of personal income to the cost of a set of selected goods, following those of the Nenets autonomous region and Moscow (subtype 1.1).

Type II brings together developed regions of the European part of the country characterised by high economic activity of population along with the unemployment rate close to the national average. However, there are certain differences in standards of living (higher in the Moscow and lower in the Kaliningrad region).

Type III, which brings together the economically developed regions of the Urals and Siberia, is similar to type II; however, it is characterised by a low density of both urban and rural population.

Type IV, comprised by the northern and eastern regions of the country, is similar to the previous two types; however, only a small percentage of their territories is cultivated. Standards of living are the highest in type 4.1 regions, close to the national average in type 4.2, and below the national average in type 4.4.

Type V is characterised by the high density of rural population.

Type VI brings together 30 regions. They are characterised by an average and below average level of territorial development, standards of living below the national average, and the level of economic activity and an unemployment rate close to the national average.

Type VII brings together northern and eastern regions with a low percentage of cultivated lands and standards of living below the national average.

Type VIII is comprised of national republics with low standards of living (except for Dagestan where standard of living is close to the national average), average or below average level of economic activity, and high unemployment rate.

A comparison between the two typologies makes it possible to speak of a strong similarity between the types identified based on demographic and other geodemographic characteristics.

In both cases, type I includes Moscow and Saint Petersburg. The metropolitan nature of these regions explains similarities in their demographic characteristics. Regions of type VIII share a category number (VIII) in both typologies. However, the second typology includes more elements and extends to a number of national republics constituting demographic type VII (subtype 7.1). There is a certain similarity between the regions comprising subtype 3.1 of the first typology and type III of the second typology, type VI of the first typology and subtype 4.1 of typology 2. Regions constituting subtype 7.1 of the first typology comprise subtypes 7.1 and 8.1 of the second typology, and those of subtype 7.2 of the first typology subtypes 4.2, 6.2, and 7.2 of the second one, etc.

However, the different types of the first and second typologies do not coincide completely. It can, of course, be explained by inevitable errors in selecting typological parameters for the second typology and, to a degree, by deviations of any typology from the actual differences between the subjects. However, it is also important that the demographic features of regions are largely explained by the independent effect of demographic factors, i. e. relative independence of the development of demographic systems. Regional demographic situation is affected by socioeconomic factors. Therefore, tailored socioeconomic policy measures can be taken to change the demographic situation. At the same time, it is important to take into account the trajectories of demographic situation development shaped by internal factors (the existing age and sex structure, demographic trends and patterns of migration, etc.).

Conclusions

A balanced and dynamic (sustainable) development of the regions within a country requires research-based management. A comprehensive analysis of GDS is instrumental in identifying the targets of regional development and harmonising key components of territorial socioeconomic systems (environmental, demographic, economic, and social) at all hierarchical levels. This approach foregrounds the role of geographic demography, whose object (GDS) describes the relationships between all regional components and makes it possible to manage its balanced development.

GDS typology occupies a central position in geodemographic studies. It makes it possible to qualitatively identify distinct groups of regions based on typological characteristics — general demographic and economic, social, distributional, ethnic, and environmental demographic categories. Each geodemographic type requires a tailored approach to improving the GDS and has to be take into account in forecasting and regulating regional development to achieve its optimal dynamics and proportionality. Regions of the same type can successfully adopt each other's practices. Russian regions characterised by a more favourable demographic situation, in combination with other geodemographic characteristics, can set an example for the regions with an unfavourable situation. And, vice versa, regions with unfavourable demographic characteristics determined by socioeconomic factors inherent to the corresponding region type can serve as a warning for the regions with good GDS indicators.

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